UNITED STATES PATENT AND TRADEMARK OFFICE

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Kirschstein, Israel, Schiffmiller & Pieroni, P.C.	EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Period for Reply

> A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
> WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
> - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
>   after SIX (6) MONTHS from the mailing date of this communication.
> - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
> - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
>   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
>   earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>23 December 2005</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
     closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>20-38</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>20,24-26,29,30,33,34 and 38</u> is/are rejected.

7) ☒ Claim(s) <u>21-23,27,28,31,32 and 35-37</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>23 December 2005</u> is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All b) ☐ Some * c) ☐ None of:

        1. ☒ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
           application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Detailed Action

1.   Acknowledgement is made of the preliminary amendment regarding the canceled claims

1-19 and the newly added claims 20-38. Claims 20-38 are currently pending.

Drawings

2.   The drawings are objected to because Figs. 1-6, 9-11 lack descriptive labels. Corrected

drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to

avoid abandonment of the application. Any amended replacement drawing sheet should include

all of the figures appearing on the immediate prior version of the sheet, even if only one figure is

being amended. The figure or figure number of an amended drawing should not be labeled as

"amended." If a drawing figure is to be canceled, the appropriate figure must be removed from

the replacement sheet, and where necessary, the remaining figures must be renumbered and

appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the

remaining figures. Each drawing sheet submitted after the filing date of an application must be

labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR

1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the

drawings will not be held in abeyance.

Claim Objections

3.   Claims 25, 30 are objected to because of the following informalities:

In line 2, claim 25, replace the word "inks" with "links." Appropriate correction is

required.

In line 2, claim 30, the term "adapted" should be removed in order to comply with current

USPTO acceptable practice.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 20, 24-26, 29-30, 33-34, 38 are rejected under 35 U.S.C. 102(e) as being

anticipated by Dally (US Publication 2003/0058848).

Regarding claim 20, Dally discloses a switching network for switching flames of data, in

defined time-slots, of a cross-connection request between a desired input and a desired output,

comprising an input stage consisting of a plurality of switching matrices (input stage comprising

links ABCDEFGH going into a plurality of its switching matrices, paragraph 0043 and Fig. 4B),

an intermediate stage consisting of a plurality of switching matrices (middle stage comprising

links ABFCHDE going into its plurality of switching matrices, paragraph 0043 and Fig. 4B), and

an output stage consisting of a plurality of switching matrices (output stage comprising links

HDFABAEC going out of its plurality of switching matrices, paragraph 0043 and Fig. 4B), each

input stage switching matrix having a link to each intermediate stage switching matrix (each

input stage having a link to each middle stage matrix, paragraph 0043 and Fig. 4B) and each

intermediate stage switching matrix having a link to each output stage switching matrix (each

middle stage switching matrix having a link to each output stage switching matrix, paragraph

0043 and Fig. 4B), including means for routing each time-slot of each frame independently

through the switching matrices (time slots are routed separately for each set of calls, paragraphs

0025, 0023).

Regarding claim 24, Dally discloses the switching network as claimed in claim 20, in

which the routing means is arranged to create a list of free time-slots in the links between the

intermediate stage switching matrices and the input and output stage switching matrices of the

request when a cross-connection request is received (a set of free time slots are arranged between

the middle stage for the set of calls, paragraphs 0025, 0023).

Regarding claim 25, Dally discloses the switching network as claimed in claim 20 in

which the links are time division multiplex links (the calls are divided by time slots and the time

slots are multiplexed, paragraphs 0025, 0023).

Regarding claim 26, Dally discloses the switching network as claimed in claim 20, in which the number of intermediate stage switching matrices (there are 4 matrices in the middle stage, Fig. 4B) is at least two less than the sum of the number of inputs of each input stage switching matrix and outputs of each output stage switching matrix (the sum of the number of inputs of each input stage switching matrix and outputs of each output stage switching matrix is 4 + 4, which is 8; thus the number of middle stage matrices is at least two less than the sum of the number of inputs of each input stage switching matrix and outputs of each output stage switching matrix, Fig. 4B).

Regarding claim 29, Dally discloses the switching network as claimed in claim 20, in which the routing means is arranged to reassemble the individually-routed time-slots into frames at the output of the output stage switching means (each of the time slots that comprises a different frame is generated at the output, Fig. 10).

Regarding claim 30, Dally discloses the switching network as claimed in claim 20, in which the switching matrices are adapted to receive standard data traffic from which internally-generated frames replacing at least some overhead have been created (time slots are created in the middle stage for a first set of calls, paragraph 0023).

Regarding claim 33, Dally discloses a digital cross-connect, comprising: a switching

matrix switching network-for switching frames of data, in defined time-slots (time slots 1, 2, 3, 4

and so on, Fig. 5-8, 10), of a cross-connection request between a desired input and a desired

output (desired input and output, Figs. 5-8, 10), the switching network including all input stage

having a plurality of switching matrices (input stage comprising links ABCDEFGH going into a

plurality of its switching matrices, paragraph 0043 and Fig. 4B), an intermediate stage having a

plurality of switching matrices (middle stage comprising links ABFCHDE going into its plurality

of switching matrices, paragraph 0043 and Fig. 4B), and an output stage having a plurality of

switching matrices (output stage comprising links HDFABAEC going out of its plurality of

switching matrices, paragraph 0043 and Fig. 4B), each input stage switching matrix having a link

to each intermediate stage switching matrix (each input stage having a link to each middle stage

matrix, paragraph 0043 and Fig. 4B), and each intermediate stage switching matrix having a link

to each output stage switching matrix (each middle stage switching matrix having a link to each

output stage switching matrix, paragraph 0043 and Fig. 4B), including means for routing each

time-slot of each frame independently through the switching matrices (time slots are routed

separately for each set of calls, paragraphs 0025, 0023).

Regarding claim 34, Dally discloses a method of routing frames of data in defined time-

slots through a switching network to fulfill a cross-connection request between a desired input

and a desired output (desired input and output, Figs. 5-8, 10), wherein the switching network

comprises an input stage consisting of a plurality of switching matrices (input stage comprising

links ABCDEFGH going into a plurality of its switching matrices, paragraph 0043 and Fig. 4B),

an intermediate stage consisting of a plurality of switching matrices (middle stage comprising

links ABFCHDE going into its plurality of switching matrices, paragraph 0043 and Fig. 4B), and

an output stage consisting of a plurality of switching matrices (output stage comprising links

HDFABAEC going out of its plurality of switching matrices, paragraph 0043 and Fig. 4B), each

input stage switching matrix having a link to each intermediate stage switching matrix (each

input stage having a link to each middle stage matrix, paragraph 0043 and Fig. 4B), and each

intermediate stage switching matrix having a link to each output stage switching matrix (each

middle stage switching matrix having a link to each output stage switching matrix, paragraph

0043 and Fig. 4B), the method comprising the step of: routing each time-slot of each frame

independently through the switching matrices (time slots are routed separately for each set of

calls, paragraphs 0025, 0023).

        Regarding claim 38, Dally discloses a method as claimed in claim 34, and the step of

creating a list of free time-slots in the links between the intermediate stage switching matrices

and the input and output stage switching matrices of the request when a cross-connection request

is received (a set of free time slots are arranged between the middle stage for the set of calls,

paragraphs 0025, 0023).

Allowable Subject Matter

5.   Claims 21-23, 27-28, 31-32, 35-37 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 21, the switching network as claimed in claim 20, in which the routing means is

arranged to route each succeeding time-slot of the cross-connection request frame through the

intermediate stage switching matrix having the link with the largest instantaneous number of free

time-slots.

In claim 27, the switching network as claimed in claim 20, in which the number of

intermediate stage switching matrices is less than twice the number of inputs of each input stage

switching matrix.

In claim 31, the switching network as claimed in claim 20, in which each lime-slot of the

links corresponds to a frame having a data rate at least one sixteenth of that of the links.

In claim 35, the method as claimed in claim 34, in which the routing step is performed by

routing each succeeding time-slot of the cross-connection request frame through the intermediate

stage switching matrix having the link with the largest instantaneous number of free time-slots.

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The

examiner can normally be reached on 9:00 am - 5:30 pm.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

                                                /Chi H Pham/
                                                Supervisory Patent Examiner, Art Unit
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                                                2/17/09

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Examiner, Art Unit 2416